UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XB051NM

Site Name: Sandstone Savannah

Precipitation or Climate Zone: 13 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site is on gently sloping to moderately steep canyon walls, hillsides and mesa tops. Slopes are usually 5 to 15 percent but may range from 0 (flat rock areas) to 25 percent with inclusions of short steeper slopes. Elevation ranges from 4,000 to 5,500 feet above sea level. The landscape is typically a complex of small pockets of soil and sandstone outcrop in the form of ledges.

Land Form:

1. Hillside
2. Canyon
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	4,000	5,500
Slope (percent)	0	25
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of this area can be classified as "semi-arid continental".

Annual average precipitation ranges from 13 to 16 inches. About seventy eight percent of the moisture usually falls during the six-month period of May through October. Most of this summer precipitation falls in the form of brief and heavy afternoon and evening thunderstorms. Hail may accompany the more severe summer storms. In the winter, there is normally only one day a month when as much as one-tenth inch of moisture falls, usually in the form of snow. Snow seldom lies on the ground for more than a few days.

Temperatures are characterized by a distinct seasonal change and large annual and diurnal temperature ranges. Summers are moderately warm. Maximum temperature average above 90 degrees F from July to August and an average summer includes about 80 days with high readings exceeding 90 degrees F and 10 days with readings above 100 degrees F. Temperatures usually fall rapidly after sundown and low of 60 degrees F on most summer nights. Winters are mild, sunny and dry. Daytime shade temperatures in midwinter usually rise to the 50's. However, freezing temperatures normally occur at night from mid-November to mid-March.

The freeze-free season ranges from 190 to 197 days. Dates of the last freeze are April 11th to April 17th and the first freeze varies from October 20th to October 25th.

Both temperature and rainfall distribution favor warm-season, perennial plant communities in the area. However, sufficient late winter and early spring moisture allows a cool-season species to occupy a minor component within the plant community

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	164	196
Freeze-free period (days):	190	218
Mean annual precipitation (inches):	13	16

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.23	0.46	21.6	57.3
February	0.30	0.44	24.0	59.2
March	0.46	0.65	29.1	68.0
April	0.36	0.92	36.3	78.3
May	0.42	1.68	45.7	82.6
June	1.20	1.86	52.2	91.2
July	2.03	2.73	59.1	92.9
August	2.09	2.75	58.1	91.0
September	1.65	1.92	51.1	84.8
October	1.23	1.93	40.1	74.7
November	0.46	0.88	28.9	63.0
December	0.37	0.62	22.1	54.6

Climate Stations:

				Period		
Station ID	290205	Location	Alamogordo Dam, NM	From: 1972	To:	2000
Station ID	293292	Location	Fort Sumner, NM	From: 01/01/14	To:	2000
Station ID	297254	Location	Ramon 8SW, NM	From: 03/04/57	To:	122/31/01
Station ID	298596	Location	Sumner Lake. NM	From: 01/0121	To:	12/31/01
Station ID	299851	Location	Yeso, NM	From: 01/01/48	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

These are well drained, shallow soils on sandstone bedrock. The surface texture are fine sandy loam, silt loam or stony types of these textures. The texture of the subsurface layer is stony loam to sandy clay loam. Sandstone is at depths of less then 20 inches. Air-water relationship is favorable for plant growth. Rock fragments make up 5 to 30 percent of the soil profile.

Parent Material Kind: Residuum
Parent Material Origin: Sandstone-unspecified

Surface Texture:

1. Cobbly fine sandy loam
2. Fine sandy loam
3. Stony loam
4. Stony sandy loam
5. Sandy loam

Surface Texture Modifier:

1. Cobble
2. Stone
3.

Subsurface Texture Group: Sandy
Surface Fragments <=3" (% Cover): 15 to 35
Surface Fragments >3" (% Cover): 15 to 35

Subsurface Fragments <=3" (%Volume): 15 to 35
Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Moderately slow	Moderately slow
Depth (inches):	4	20
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	0.00	0.00
Soil Reaction (1:1 Water):	6.6	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	0	3
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
Mid-grasses and short grasses dominate this site. Juniper and shrubs are associated with the very shallow soils near the bare ledges of rock outcrops. Grass occupies approximately 70 percent of the total annual herbage production with shrubs and perennial and annual forbs evenly distributed.

Canopy Cover:	
Trees	0
Shrubs and half shrubs	10 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	20
Bare ground	25
Surface gravel	5
Surface cobble and stone	20
Litter (percent)	20
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	280	560	840
Forb	60	120	180
Tree/Shrub/Vine	60	120	180
Lichen			
Moss			
Microbiotic Crusts			
Total	400	800	1,200

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOGR2	Blue Grama	120 – 136	120 – 136
2	BOCU	Sideoats Grama	120 – 136	120 – 136
3	SCSC	Little Bluestem	56 – 72	56 – 72
4	HENE5	New Mexico Feathergrass	56 – 72	56 - 72
5	BOER4	Black Grama	56 – 64	56 – 64
6	BOHI2	Hairy Grama	24 – 40	24 – 40
7	LYPH	Wolftail	24 – 40	24 – 40
8	ANHA	Sand Bluestem	16 – 24	16 – 24
9	ARIST	Threeawn spp.	16 – 24	16 – 24
10	NOMI	Sacahuista	8 – 24	8 – 24
11	BOSA ELEL5 TRMUE	Silver Bluestem Bottlebrush Squirreltail Rough Tridens	0 – 24	0 – 24
12	SPCR	Sand Dropseed	0 – 16	0 – 16
13	PLJA	Galleta	0 – 16	0 – 16

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	LATHY	Peavine spp.	8 – 24	8 – 24
15	LESQU	Bladderpod	0 – 16	0 – 16
16	CACO17	Indian Paintbrush	0 – 16	0 – 16
17	SPHAE	Globemallow spp.	0 – 16	0 – 16
18	ASTRA	Astragulas spp.	0 – 16	0 – 16
19	2FP	Other Perennial Forbs	32 – 48	32 – 48
20	2FA	Other Annual Forbs	32 – 48	32 – 48

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
21	JUNIP	Juniper spp.	24 – 40	24 – 40
22	KRLA2	Winterfat	16 – 32	16 – 32
23	PIED	Pinyon Pine	8 – 24	8 – 24
24	YUCCA	Yucca spp.	8 – 24	8 – 24
25	RHTR	Skunkbush Sumac	8 – 24	8 – 24
26	ACGR	Catclaw Acacia	0 – 16	0 – 16
27	GUSA2	Broom Snakeweed	0 – 16	0 – 16
28	ARTEM	Sagebrush spp.	0 – 16	0 – 16

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Growth Curves

Growth Curve ID **4001NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Mid and short grassland with minor components of forbs and shrubs.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	10	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat which support a resident animal community that is characterized by mule deer, bobcat, spotted skunk, eastern cottontail, rock squirrel, rock mouse, great horned owl, scrub jay, canyon wren, prairie rattlesnake and eastern fence lizard.

There is nesting use of the juniper and shrub foliage by roadrunner, magpie, mockingbird and loggerhead shrike.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Lacoca	D
Latom	D
Newkirk	D

Recreational Uses:

This site has good aesthetic appeal and natural beauty with its large variety of plants that bloom from early spring to late fall. The physiographic features break the "wide open space" of the plains. This site has fair suitability for camping, hiking and picnicking. Hunting is fair for deer, rabbits and quail is fair to good. This site provides fair screening. Photography and birdwatching for small bird and raptors is fair.

Wood Products:

Production of juniper and pinyon provide limited fuel for firewood and a limited quantity of fence posts.

Other Products:

Grazing:

This site can be grazed any season of the year by all classes and ages of livestock. Because of the slopes and rock outcrops, a younger age of livestock utilizes this site the best. Browsing animals should be considered because of the site's potential to produce shrubs and forbs. Continuous yearlong grazing or grazing continually during the potential growing season (April-October) by cattle will result in a decrease of species such as sideoats grama, little bluestem, New Mexico feathergrass, black grama and winterfat. Species such as hairy grama, juniper, ring muhly and broom snakeweed will increase. On sites with scattered juniper continuous heavy grazing pressure will allow juniper to increase to give the appearance of dominating the site. A system of deferred grazing by domestic livestock, which varies the season of grazing and rest during successive years, will result in a health, well-balance plant community. Fall and winter rest will benefit shrubby species such as winterfat. Spring rest (April-June) will allow cool-season grasses to mature. Cattle show a definite season preference on black grama and usually utilize it heavily during the late winter from January to March. A large variety of grasses, forbs and shrubs provide a well-balanced feed and good nutrition for all grazing animals. Ninety percent of the annual production is from species that provide forage for grazing animals.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.4 – 5.4
75 – 51	4.3 – 7.8
50 – 26	5.6 – 11.2
25 – 0	11.3+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Sand Bluestem	Andropogon hallii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Winterfat	Krascheninnikovia lanata	L/S	D	D	P	P	P	P	P	P	D	D	D	D

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	D	D	D	D	P	P	P	P	P	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	D	P	P	D	D	D	D	D
Winterfat	Krascheninnikovia lanata	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Bigelow Sagebrush	Artemisia bigelovii	L/S	U	U	U	U	U	D	D	D	D	D	D	U
Globemallow	Sphaeralcea spp.	EP	U	U	P	P	P	D	D	D	D	D	D	U
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Indian Paintbrush	Castilleja coccinea	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Livestock
Animal Type: Horse

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sand Bluestem	Andropogon hallii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Sand Sagebrush	Artemisia filifolia	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Bigelow Sagebrush	Artemisia bigelovii	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Fringed Sagewort	Artemisia frigida	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Globemallow	Sphaeralcea spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Bladderpod	Lesquerella spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Indian Paintbrush	Castilleja coccinea	EP	U	U	D	D	D	D	D	D	U	U	U	U
Locoweed	Astragulas spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: New Mexico

County: De Baca, Guadalupe, Quay, San Miguel

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes ☐ No ☐

General Legal Description: Tucumcari field office and Bugg Ranch

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Pecos-Canadian Plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: San Miguel, Quay, Guadalupe, De Baca and Chaves

Characteristic Soils Are:	
Lacoca	Latom
Newkirk	
Other Soils included are:	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	07/26/78	Don Sylvester	07/26/78

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	10/28/02	George Chavez	2/11/03